REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 3, and 4 are presently active in this case. Claim 1 is amended, and Claims 2 and 5 are cancelled without prejudice or disclaimer by the present amendment. Applicants note that Claim 1 is amended to incorporate the limitations previously recited in Claim 2.

In the Office Action mailed December 11, 2003 (herein "December OA"), Claim 2 (as presented in the Amendments filed October 27, 2003 and March 11, 2004) was rejected under 35 U.S.C. § 103(a) as unpatentable over Sato as modified by in view of the background discussion at page 2, lines 23-24 of Applicants' specification (herein "BD"), and in further view of obvious design choice. For the reasons discussed below, Applicants respectfully submits that Claim 1 is allowable over the cited references.

Amended Claim 1 is directed to a blade having a turning angle greater than 120 degrees and where a ratio of blade maximum wall thickness and blade chordal length is 0.15 or more, and a wedge angle of the rear edge is 10 degrees or less. Support for the amendment can be found at least at FIG. 3 and page 9, lines 1-7 of the specification. Thus, no new matter is added.

The features recited in amended Claim 1 enable the provision of a heavy duty, high load, and high temperature gas turbine. More specifically, as stated at page 9, line 16 through page 10, line 5 of the specification, the features of amended Claim 1 provide a geometrically determined gradual decrease in passage width and prevent the formation of a deceleration passage between blades (see also FIG. 8).

Page 3 of the December OA notes that Sato as modified by BD does not "disclose expressly" that a ratio of blade maximum wall thickness and blade chordal length is 0.15 or

more, and a wedge angle of the rear angle is 10 degrees or less. Further, the December OA states that these features are not disclosed as solving any stated problem or for any particular purpose above the fact that the blade profile reduces the flow velocity differential across the blade. Thus, the December OA claims that it would have been an obvious matter of design choice to modify the blade of Sato in the manner claimed by Applicants.

However, Applicants note that Sato teaches a turbine blade 10 configured so the load (the difference between pressures at the belly side 10a and the back side 10b of the blades) on the blade surface is distributed more towards a front edge of the blade (towards the inlet end of the blade) to reduce the deceleration at the back side 10b and to prevent thickening of the boundary layers δp, δs of the turbine blade 10 with a conventional turning angle. It is also submitted that Sato describes a blade for reducing the flow velocity differential between the boundary layers δp, δs of a same blade and a downstream velocity defect (see FIGs. 3 and 4, and Col. 2, lines 8-14). Applicants further note that Sato does not teach or suggest minimizing the formation of a deceleration passage between adjacent blades or reducing a loss in work provided by a gas turbine using blades having wide turning angles (greater than 120 degrees) by incorporating the structural features recited in Claim 2.

Therefore, there is no motivation to combine Sato with AAPA to render the structure of the amended Claim 1 obvious.

Moreover, Applicants respectfully reiterate the previously presented comments that general conclusions concerning what is basic knowledge to one of ordinary skill in the art, without specific factual findings and some concrete evidence in the record to support such findings, cannot support an obviousness rejection (MPEP § 2144.03b). It appears that the Office Action is taking official notice that all the features of amended Claim 1 and associated advantages are well known in the art or a matter of obvious design choice.

If official notice is being taken, Applicants respectfully submit that official notice alone is not permissible as grounds for rejection in the outstanding Office Action, as stated in the MPEP at § 2144.03(a). In particular, Applicants respectfully submit that the features advantageously recited in Claim 1 are not "capable of instant and unquestionable demonstration as being well-known."

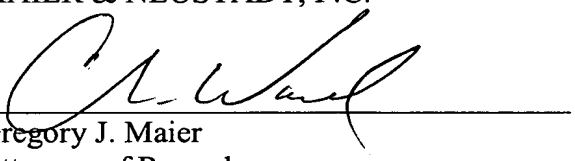
Taking of such notice is again respectfully traversed, and Applicants further respectfully request citation of a reference demonstrating that the specific modifications to the ratio and wedge angle of Claim 1 are well known in the art of turbine blade design.

Accordingly, Applicants respectfully submit that Claim 1 as amended distinguishes over the cited references.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



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